U.S. Department of Health and Human Services

Office of the National Coordinator for Health Information Technology

Consultation and Transfers of Care

Prototype Use Case

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1.0 Preface

Use cases developed for the American Health Information Community (AHIC) are based on the priorities expressed by the AHIC workgroups. These high-level use cases focus on the needs of many individuals, organizations, and systems rather than the development of a specific software system. The use cases describe involved stakeholders, information flows, issues, and systems needs that apply to the multiple participants in these arenas.

The use cases strive to provide enough detail and context for detailed policy discussions, standards harmonization, certification considerations, and architecture specifications necessary to advance the national health information technology (HIT) agenda. These high-level use cases focus, to a significant degree, on the exchange of information between organizations and systems rather than the internal activities of a particular organization or system.

During the January 2007 AHIC meeting, nine priority areas (representing over 200 identified AHIC and AHIC workgroup detailed priorities) were discussed and considered. Three of these areas (Consumer Access to Clinical Information, Medication Management, and Quality) were prioritized and developed into the 2007 Detailed Use Cases, which were published in June 2007. The Health Information Technology Standards Panel (HITSP) Technical Committees are currently conducting harmonization work on these use cases.

The remaining six priority areas from the January 2007 AHIC meeting were updated based upon AHIC feedback and were reviewed during the July 2007 AHIC meeting. These six priority areas are now being developed into the 2008 Use Cases (Remote Monitoring, Remote Consultation, Personalized Healthcare, Consultation and Transfers of Care, Public Health Case Reporting, and Immunizations & Response Management) which will be processed in the national HIT agenda activities in 2008.

The 2008 Use Cases are being developed by the Office of the National Coordinator for Health Information Technology (ONC) with opportunities for review and feedback by interested stakeholders within both the private and public sectors. To facilitate this process, the use cases are being developed in two stages:

- The **Prototype Use Cases** describe the candidate workflows for the use case at a high level, and facilitate initial discussion with stakeholders; and

- The **Detailed Use Cases** document all of the events and actions within the use case at a detailed level.

This document is a prototype use case, which describes at a high level the actors, capabilities, and information sharing needs associated with this use case. ONC is publishing

the prototype use case at an earlier stage of development in order to incorporate more substantive input from interested stakeholders into the detailed use case.

The prototype use case is divided into the following sections:

- Section 2.0, Introduction and Scope, briefly describes the priority needs identified by one or more AHIC workgroups and preliminary decisions made about the scope of the use case.

- Section 3.0, Use Case Stakeholders, briefly describes individuals and organizations which participate in activities related to the use case and its components.

- Section 4.0, Issues and Obstacles, briefly describes issues or obstacles which may need to be resolved in order to achieve the capabilities described in the use case.

- Section 5.0, Perspectives, briefly describes how the use case combines similar roles (or actors) in order to describe their common needs and activities. The roles are intended to describe functional roles rather than organizations or physical entities.

- Section 6.0, Candidate Workflows, briefly describes how various perspectives interact and exchange information within the context of a workflow. The use case workflow model provides a context for understanding the information needs and is not meant to be prescriptive.

- Appendix A, the Glossary, provides draft definitions of key concepts and terms contained in the prototype.

Also within the prototype document are specific questions for which ONC would like to receive feedback during the development process. Following receipt of feedback from interested stakeholders, ONC will develop a detailed use case, which will incorporate the feedback received, fully describe the events and activities from a variety of perspectives, and include information flow diagrams.

2.0 Introduction and Scope

The Consultation and Transfers of Care Prototype Use Case will focus on the exchange of information between clinicians, particularly between requesting clinicians and consulting clinicians, to support consultations such as specialty services and second opinions. This use case will also focus on the exchange of clinical information needed during transfers of care between settings. Transfer of care occurs when patients are discharged and transferred from one health setting to another, such as to or from an acute care hospital, emergency department, skilled nursing or rehabilitation facility, or to home with or without home health care services.

In specific terms:

- Clinicians and consumers could benefit from electronic communication supporting a request for and fulfillment of a consultation and during transfers of care. This could include bi-directional, standardized exchange of necessary electronic information.

- Consumers could benefit from greater continuity and quality of care during transitions of care settings and providers, while clinicians could benefit from more comprehensive and usable health information with which to coordinate and improve care, minimize medical errors and costs, and maximize efficiency.

Lapses in information between settings, particularly in the case of both transfers of care and in consultations, pose a significant challenge to ensuring that clinicians have accurate and timely data with which to provide high quality care. Both quantitative and qualitative studies indicate that patient safety can be threatened during times of transition from one care setting to another. The risk of medication errors is high when patients receive medications from various providers in different care settings. Additionally, the existing consultation process is, at times, not timely and not supported by adequate information. As a result, delayed diagnoses, poor continuity of care, redundancy in care delivery, and frustrated patients and clinicians can result. All of these issues can impact the quality of the care delivered.

This use case is focused on the exchange of relevant patient information between providers of care. In particular, the scope of this use case includes an articulation of needs to enable the exchange of information between providers and between providers and patients in relation to consultations and transfers of care.

Clinical information will be identified for sharing in a standardized manner during consultations and transfers of care. For consultations, this set of information will include an explicit reason for the consult, request of the consulting clinician and necessary patient data. Some clinical information will be of a general nature and some will be setting and specialty-specific. This use case will also support capabilities for consulting clinicians to look-

up and retrieve, as appropriate, additional patient information to supplement that which is sent in the consult request. Some refinements to a common or core set of information will emerge through the use case process, and others may be identified and developed over time by appropriate healthcare organizations.

Provider-to-provider requests for consultations in the ambulatory setting will be a primary focus, as compared to the information exchange inside of an organization. The process includes both initiating the request for consultation and providing the relevant clinical findings back to the originator of the request (typically the primary care provider). Additionally, this process includes the role of the patient in initiating the consultation (where applicable) and in receiving relevant information in return following completion of the consultation. Transfer of care is focused on providing clinical and non-clinical information needed by clinicians to accomplish a transition in care from one care setting to another. The focus will be on transitions between emergent, acute, long-term care settings, homecare and other inter-organizational transitions rather than transfers within a given care setting. The specific information needs may vary depending on the care settings involved.

This use case assumes the developing presence of electronic systems such as Electronic Health Records (EHRs), Personal Health Records (PHRs), and other local or Web-based solutions supporting consumers and clinicians, while recognizing the issues and obstacles associated with these assumptions. This approach helps promote the development of longer-term efforts.

> *ONC acknowledges that there is ambiguity in the terms "referral" and "consultation" – please validate whether usage of these terms in this use case is clear. Please share any concerns you have regarding what is included and not included in the scope of this use case.*

3.0   Use Case Stakeholders

Figure 3-1. Consultation and Transfers of Care Use Case Stakeholders Table

Stakeholder	Working Definition
Ancillary Entities	Organizations that perform auxiliary roles in delivering healthcare services. They may include diagnostic and support services such as laboratories, imaging and radiology services, and pharmacies that support the delivery of healthcare services. These services may be delivered through hospitals or through free-standing entities.
Clinicians	Healthcare providers with patient care responsibilities, including physicians, advanced practice nurses, physician assistants, nurses, and other credentialed personnel involved in treating patients.
Consumers	Members of the public who may receive healthcare services. These individuals may include: caregivers, patient advocates, surrogates, family members, and other parties who may be acting for, or in support of, a patient in the activities of receiving healthcare and/or being referred, consulted, and/or transferred to various healthcare settings.
Health Record Banks	Entities/mechanisms for holding an individual's lifetime health records, which now may reside in dozens of hospitals, doctors' offices, clinics, etc. They would be released to other doctors and hospitals with the patients' consent.
Healthcare Entities	Organizations that are engaged in or support the delivery of healthcare. These organizations could include hospitals, ambulatory clinics, long term care facilities, community-based healthcare organizations, employers/occupational health, school health, psychology, dental clinics, care delivery organizations, and other healthcare facilities.
Healthcare Payors	Insurers, including health plans, self-insured employer plans, and third party administrators, providing healthcare benefits to enrolled members and reimbursing provider organizations. As part of this role, they provide information on eligibility and coverage for individual consumers, as well as claims-based information on consumer medication history. Case management or disease management may also be supported.
Personal Health Record Service Providers	Organizations which assist in providing PHR capabilities to consumers. These capabilities may include providing services using information which is gathered/ stored from a separate organization. Organizations that provide these capabilities may include: vendors, healthcare providers, health data banks, healthcare payors, referral management providers, etc.
Pharmacy Benefit Managers (PBM)	These entities manage pharmacy benefits on behalf of payors, interacting with pharmacies and providers via a medication network intermediary. As part of this role, they can provide information on pharmacy benefits available to an individual consumer and an individual consumer's medication history.
Public Health Agencies (local/state/federal)	Local, state, and federal government organizations and personnel that exist to help protect and improve the health of their respective constituents.

Stakeholder	Working Definition
Registries	Organized systems for the collection, storage, retrieval, analysis, and dissemination of information on individual persons to support health needs. May include emergency contact information/next-of-kin registries, etc.

ONC would like to receive feedback on the draft list of stakeholders and their descriptions for this use case. Please suggest additions, deletions and/or revisions to the description of the stakeholders.

4.0 Issues and Obstacles

Realizing the full benefits of information exchange between providers and care settings will be dependent on overcoming a number of issues and obstacles in today's environment. Inherent in this use case is the premise that some of these will addressed through policy development, health information technology standardization and harmonization activities, health information exchange (HIE) networks and other related initiatives.

Confidentiality, Privacy, Security, and Data Access

- Confidentiality and privacy

    o   Access to personal health information from EHRs needs to be accomplished in a confidential and secure manner that complies with privacy requirements and respects consumer decisions regarding access to their information.

    o   Personal health information must be appropriately secured whenever it is stored, transmitted, or disposed of by any person or entity authorized to access, collect, maintain, use and disclose that information.

    o   Secondary uses of this information need to be appropriately controlled.

- Security and data access

    o   Personal health data must be appropriately secured whenever stored transmitted or disposed of.

    o   Where information is passed across multiple organizations or geographic regions there will be compliance to applicable local, state and federal regulations.

- Access logs

    o   Consumers will need the ability to review logs describing who has had access to their information.

Lack of Standardization

- Lack of standardization of data content

    o   There is no existing standard for the content of data that should be shared during transfers of care. Additionally, there is limited standardization of EHRs, and EHRs are often customized during implementation, resulting in further lack of standardized information.

o There is no standard for data content for requests for consultations or for consultation findings/reports. Although most clinicians share some common information related to consultations, there is no uniform standard for what data may be shared both in the request as well as in any reports back following the consultation.

Limited HIT Penetration

- Inter-clinician communication of consultations is impeded by inconsistent adoption of EHRs, particularly in small physician practices.

- Inter-provider communication between care settings is impacted by inconsistent adoption of health information technology. This is especially true of long term care facilities, which are slow to adopt and frequently involved in transfers of care between sub-acute and acute settings.

- There are very few health information exchanges in operation that currently exchange electronic information across the various care settings to enable seamless sharing of information to support consultations and transfers of care.

Communication Technologies

- For asynchronous communications, standards must be established to provide for secure structured communications. Appropriate capture and archival of these communications within the electronic health records must also be identified.

- For synchronous ("live") communications, standards for conducting and recording these video and audio communications must be established. Appropriate capture and archival of some of these communications, as a component of an encounter summary within electronic health records must also be identified.

Decision Support

Decision support can greatly assist clinicians in making appropriate decisions on when to refer a patient, seek a consultation or transfer a patient. However at the current time there are limited choices available and a lack of standardization in these systems.

ONC would like to receive feedback on the draft list of issues and obstacles and their descriptions for this use case. Please suggest additions, deletions and/or revisions.

5.0 Use Case Perspectives

The Consultation and Transfers of Care Prototype Use Case describes the flow of clinical information through an EHR system from one provider of care to another. In this sense, a provider may be an individual clinician as in the case of a consultation, or a care delivery setting as in the case of transfer of care. This use case describes several perspectives. Each perspective represents the exchange of clinical information from the viewpoint of the major stakeholders involved in sharing data between clinicians and provider settings.

- **Requesting Clinician**

The requesting clinician perspective includes determination of the need for a consultation and initiation of request for consultation for services accordingly. A requesting clinician may seek a consultation for any number of reasons, including asking the consulting clinician to advise on the establishment of a diagnosis or management plan, to offer a second opinion, to validate findings, to take over management of the patient, to conduct a procedure or test, etc. This perspective describes the flow of information through a clinician's EHR when a patient is seen and there is a consultation to a different clinician requested.

- **Consulting Clinician**

The consulting clinician perspective includes receipt of request for consultation from other clinicians or through patient direct request for consultation. This request for consultation will include an explicit request by the referring clinician detailing the reason or need for consultation and relevant clinical information. In the case of a patient-initiated consultation, the request may include information provided by the patient's clinician. This perspective describes the flow of information through a clinician's EHR when there is a request for consultation, and includes the feedback loop back to the requesting clinician and the patient.

- **Discharge/Transfer of Care Setting**

When a patient completes a stay in a particular care setting, he or she is either formally "discharged" home or transferred to another care setting. The transfer of care setting may be a hospital, post-acute care setting, long term care setting or home care. This perspective describes the flow of critical patient information through a discharging/transferring care setting's EHR to the next provider of care. When the patient is discharged home, relevant information is shared with the patient's PHR.

- **Receiving Care Setting**

When a patient is transferred from another care setting, he or she is admitted to the new care setting. The receiving care setting may be a hospital, post-acute care setting, long term care setting, home health care, or a home. This perspective describes the flow of critical patient information from a discharging/transferring provider of care to a receiving care setting's EHR and /or PHR.

- **Patient/Consumer**

Patients can both receive and initiate a request for consultation. They are also the subject of a discharge/transfer of care. This perspective describes the flow of information from a provider to a patient, and includes the sharing of information between health information systems and a patient's PHR. Family members could provide care once the patient is discharged home, and may be granted access to the patient's PHR to assist/inform continued care.

These perspectives are the focus of the events described in the following candidate workflows.

ONC would like to receive feedback on the draft list of perspectives and their descriptions for this use case. Please suggest additions, deletions and/or revisions.

6.0 Candidate Workflows

The Consultation and Transfers of Care Prototype Use Case focuses on the exchange of a core set of information between clinicians, care settings and with patients. This use case describes two candidate workflows.

6.1 Consultation

This workflow is focused on the sharing of information to support a request for a consultation, the consultation itself and the sharing of information back to the requesting clinician. This scenario includes the sharing of a request for consultation and a core set of clinical and administrative information between clinicians, as well as additional context specific information which may be provided and/or requested by the consulting clinician. Requesting clinicians can "push" a core set of clinical information, which can include (but is not limited to) diagnostic images, procedure reports, laboratory results, etc. Consulting clinicians may also seek additional clinical information as necessary and relevant to developing a comprehensive clinical picture.

- Patient's clinician or patient determines the need for a consult with another clinician.

- The patient's clinician or patient initiates a request for consultation and identifies a consulting clinician with the relevant specialty.

- A core set of patient information, as well as an explicit reason for the request for consultation and a specific request for outcome (e.g., evaluation, validate with second opinion, conduct a specific test or procedure, etc.), is transmitted to the consulting clinician. Context-specific clinical information will then be transferred and, at times, the requesting clinician may seek to augment the available patient information with additional information that may be retrieved after a look-up and request.

- The consulting clinician evaluates the patient and generates new information about the patient. Much of this information will reside in the consulting clinician's EHR and some will be transmitted back to the requesting clinician and/or a patient's PHR.

- Information is shared back to the requesting clinician. The consulting clinician provides specific information back to the requesting clinician based on the type of consult requested and the type of services provided, such as a recommendation, medical opinion, test results, interpretation of findings, plan for treatment or management, etc. This information may also be transmitted to the patient and included in the patient's PHR.

6.2 Transfers of Care

This workflow is focused on the sharing of information to support the discharge and/or transfer of a patient from one care setting to another. The clinical accountability and management of the patient is transferred from one clinician and care setting to another. This scenario includes the sharing of a set of clinical and administrative information between provider organizations, as well as additional information which may be accessed or requested by the new provider of care.

- Patient's clinician determines the need to discharge patient and transfer to another care setting. Decision support may assist the clinician in determining the need for discharge and elements of discharge planning, as well as in assisting clinician in identifying the appropriate care setting to which the patient should be transferred. Once transferred, medical management and accountability for the patient is also transferred to the next provider of care.

- The discharging care setting reviews the discharge plan with the patient and patient's caregiver(s) and helps coordinate the transfer to new care setting. Communication with the patient's payer, and determination of authorization and/or coverage for transfer may be included in the care coordination activities of the discharging care setting.

- A core set of patient information, including discharge summary, care plan and discharge orders, are transmitted to receiving care setting. The responsibility for care and possible treatment for the patient or for a particular medical condition of the patient is transferred to the new care setting.

- The receiving care setting evaluates the patient and initiates new orders. Depending on the level of involvement of receiving care setting, some level of information may be shared back to the clinician initiating the transfer, and some level may also be shared back to the patient's primary care clinician. This information may also be transmitted to the patient and included in the patient's PHR.

- In evaluating the patient, the receiving care setting may be able to access additional information as needed to further augment the core set of information shared by the referring clinician. This information may include laboratory results, imaging reports, medication/pharmacy information, etc.

At a high level, the following types of information needs have been identified, and will be included in the candidate workflows:

Figure 6-1. Consultation and Transfers of Care Information Needs Table

INFORMATION NEEDS	
Consultations: can be for specific procedure or surgery, as well as for specific specialty or sub-specialty, or transfer of care and management of patient to another clinician (e.g., anesthesia, cardiology, ophthalmology, pathology, psychiatry, radiology, etc.).	**Transfer of Care:** can be for variety of transitions in care (e.g., ED to acute care admission, acute to sub-acute setting, nursing home to ED, acute care to hospice, sub-acute to home health, etc.).
▪ Request for consult ▪ Specific clinical data for the context of this consult. Identification of clinical problem requiring consultation (problem to address, questions to answer) ▪ Summary level patient clinical information to be reviewed by consulting clinician (e.g., history, complaint, medications) ▪ Ability to query for more information if warranted/authorized ▪ Report back to requesting clinician and/or patient including assessment, recommendation, opinion, answers to specific question, test /diagnostic results	▪ Identification of context for transfer of care (discharge summary - e.g., rehabilitation services, hospice care, skilled nursing services) ▪ Summary level patient clinical information to be reviewed by admitting care setting (e.g., history, complaint, medications) ▪ Ability to query system for more information if warranted/authorized ▪ Information to be sent to primary care clinicians/care settings and/or to patient/PHR

ONC would like to receive feedback on the candidate workflows. Should any changes be made to the descriptions of these interactions? For those candidate workflows listed, is the working definition of key information sources and recipients sufficient? If not, what changes should be made?

Input on the categorization of necessary data for different types of consultations and transfers of care is welcome.

For the information needs presented in the table above, are there any gaps in the information needs identified? Should anything be added? Should anything be removed or revised?

Appendix A: Glossary

AHIC: American Health Information Community.

Ancillary Entities: Organizations that perform auxiliary roles in delivering healthcare services. They may include diagnostic and support services such as laboratories, imaging and radiology services, and pharmacies that support the delivery of healthcare services. These services may be delivered through hospitals or through free-standing entities.

CCHIT: Certification Commission for Healthcare Information Technology.

Clinicians: Healthcare providers with patient care responsibilities, including physicians, advanced practice nurses, physician assistants, nurses, and other credentialed personnel involved in treating patients.

CMS: Centers for Medicare & Medicaid Services, a federal agency within the Department of Health and Human Services.

Consumers: Members of the public who may receive healthcare services. These individuals may include: caregivers, patient advocates, surrogates, family members, and other parties who may be acting for, or in support of, a patient in the activities of receiving healthcare and/or being referred, consulted, and/or transferred to various healthcare settings.

Department of Health and Human Services (HHS): This is the federal agency responsible for human health, and has oversight over many other federal agencies such as FDA, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), CMS, the Agency for Health Research and Quality (AHRQ), the Substance Abuse and Mental Health Services Administration (SAMHSA), and others.

Electronic Health Record (EHR): The electronic health record is a longitudinal electronic record of patient health information generated in one or more encounters in any care delivery setting. This information may include patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory information and radiology reports.

FDA: Food and Drug Administration.

Health Information Exchange (HIE): A multi-stakeholder entity that enables the movement of health-related data within state, regional, or non-jurisdictional participant groups.

Healthcare Entities: Organizations that are engaged in or support the delivery of healthcare. These organizations could include hospitals, ambulatory clinics, long term care facilities, community-based healthcare organizations, employers/occupational health, school health, psychology, dental clinics, care delivery organizations, and other healthcare facilities.

Healthcare Payors: Insurers, including health plans, self-insured employer plans, and third party administrators, providing healthcare benefits to enrolled members and reimbursing provider organizations. As part of this role, they provide information on eligibility and coverage for individual consumers, as well as claims-based information on consumer medication history. Case management or disease management may also be supported.

Health Record Banks: Entities/mechanisms for holding an individual's lifetime health records, which now may reside in dozens of hospitals, doctors' offices, clinics, etc. They would be released to other doctors and hospitals with the patients' consent.

HITSP: Healthcare Information Technology Standards Panel.

ONC: Office of National Coordinator for Health Information Technology.

Personal Health Record (PHR): A health record that can be created, reviewed, annotated, and maintained by the patient or the caregiver for a patient. The personal health record may include any aspect(s) of the health condition, medications, medical problems, allergies, vaccination history, visit history, or communications with healthcare providers.

Personal Health Record Service Providers: Organizations which assist in providing PHR capabilities to consumers. These capabilities may include providing services using information which is gathered/ stored from a separate organization. Organizations that provide these capabilities may include: vendors, healthcare providers, health data banks, healthcare payors, referral management providers, etc.

Pharmacy Benefit Managers: These entities manage pharmacy benefits on behalf of payors, interacting with pharmacies and providers via a medication network intermediary. As part of this role, they can provide information on pharmacy benefits available to an individual consumer and an individual consumer's medication history.

Public Health Agencies (local/state/federal): Local, state, and federal government organizations and personnel that exist to help protect and improve the health of their respective constituents.

Registries: Organized systems for the collection, storage, retrieval, analysis, and dissemination of information on individual persons to support health needs. May include emergency contact information/next-of-kin registries, etc.